

Hab. Bay of Manila (found in sandy mud at the depth of four fathoms); Cuming.

MANGELIA PURA. *Mang. testá oblongo-ovatá, spirá subturritá, suturis profundis; anfractibus concentricè costatis; albidd, maculis perpaucis aurantio-fuscis.*

Hab. — ?

MANGELIA SOLIDA. *Mang. testá cylindraceo-ovatá, utrinque attenuatá, solidá, undique creberrimè granoso-clathratá; aperturá longiusculá; purpurascete.*

Hab. Island of Burias, Philippines (among sand at the depth of seven fathoms); Cuming.

MANGELIA DERELICTA. *Mang. testá ovatá, longitudinaliter fortiter concentricè costatá, transversim subobsoletè striatá; fuscescente.*

Hab. — ?

MANGELIA ZEBUENSIS. *Mang. testá ovato-oblongá, spirá acuminatá, basi subattenuatá, concentricè fortiter costatá, transversim creberrimè striatá; fuscescente.*

Hab. Island of Zebu, Philippines (found in sandy mud at the depth of four fathoms); Cuming.

MANGELIA CINCTA. *Mang. testá subfusiformi-ovatá, spirá turritá, suturis subprofundis; anfractibus supernè angulatis, longitudinaliter costatis, costis distantibus; albidd, anfractibus fasciá latá fuscescente supernè cinctis.*

Hab. Island of Bohol, Philippines (found under stones at low water); Cuming.

MANGELIA DIGITALIS. *Mang. testá fusiformi-ovatá, solidá, undique creberrimè granoso-clathratá; albicante, zonis duabus purpureis angustis cingulatá.*

Hab. — ?

MANGELIA NANA. *Mang. testá ovatá, spirá brevi, turritá, apice acutá; anfractibus supernè angulatis, longitudinaliter obliquè costatis, interstitiis cavis, subtiliter striatis.*

Hab. Island of Mindanao, Philippines (found in sandy mud at the depth of twenty-five fathoms); Cuming.

MISCELLANEOUS.

ON THE DEVELOPMENT OF THE MEDUSÆ.

DR. REID directed the attention of the Society to some observations he had made on the young of the Medusæ. He mentioned, that many of the members of the Society were probably not aware, that the researches of Sars and Siebold had shown that the young of the Medusæ (the common sea-nettles and sea-blubber of our coasts) live for a time like polypes; and that, during their polype life, they generate other animals like themselves, all of which afterwards become Medusæ. This very curious fact has of late naturally attracted a

good deal of attention. The specimens upon which these observations were made, were found by Mrs. Macdonald on the 15th of September last, adhering to the lower surface of a stone lying in a shallow pool near low-water mark. When obtained, they were between thirty and forty in number; and the largest was between two and three lines in length. When examined under the microscope, they presented characters somewhat intermediate between a hydraform and actiniform polype, but still different from either; and it was not until Dr. Reid had completed his examination of their structure, that he discovered that this animal had been described by Sars, first under the name of *Scyphistoma*, and afterwards as the young of one of our common Medusæ (*Medusa aurita*).

After giving a description of the external characters of these animals, and pointing out that this agreed in the main with that by Sars, Dr. Reid then proceeded to explain the results of a more minute examination of their structure.

The body of the animal is composed of two distinct layers—an internal and an external. The internal contains numerous nuclei and nucleated cells, is thicker and more opaque than the external, which, on the other hand, is chiefly composed of a structureless substance, having numerous oval cells (filiferous capsules) on its outer surface, measuring about $\frac{1}{2000}$ th part of an inch in their largest diameter, and having coiled up in their interior a long spiral thread, which was occasionally seen uncoiled, and projecting from one end of the cell, along with its lining membrane. Filiferous capsules are also found in smaller number upon the inner surface of the internal layer. The internal layer, which, as has been already stated, is so rich in nuclei and nucleated cells, is folded inwards, and forms the four projections seen on the internal surface of the stomach. Each of these projections is a canal, as may be distinctly made out, on making a transverse section of the body and placing it under the microscope: and the four canals thus formed terminate at their upper end in a circular canal, placed round the mouth, and near the margin of the disc. Into this circular canal the hollow tentacula open. The inner surface of this circular canal and of the tentacula is lined by a prolongation of the internal layer. Between the mouth and margin of the disc are four round depressions, corresponding to the termination of the four vertical in the circular canal, which at first sight appear to be four apertures opening into the circular canal; but a membrane is stretched across the bottom of each depression, sufficiently thin to permit the ready transmission of fluids through it. In certain positions of the extensible mouth, white lines presenting the appearance of vessels are seen passing from the position of the circular canal to the margin of the mouth, and uniting with each other along this margin; but Dr. Reid has not yet been able to satisfy himself that these are vessels. In some of the numerous forms which the mouth assumes, these lines entirely disappear, and when present they seem to be formed by narrow ridges on the external surface. The margin of the mouth presents some indications of the

presence of a canal, but he had not been able to satisfy himself that one actually exists there. The external surface of the tentacula, especially at their edges, is covered by a great number of the filiferous cells or capsules, already described as being present in the external layer of the body. The edges and inner surface of the mouth, and the whole of the surface of the internal cavity or stomach, are covered with cilia; and minute cilia, not easily detected, are present on the outer surface of the tentacula, so that currents of water, unless when the mouth is shut, are constantly passing in and out from the stomach and along the tentacula.

These animals increased considerably in size, and began to produce stolons and buds about the middle of January; and though at this period the original number had been considerably reduced, the whole lower surface of the stone is now almost covered with them, and at present they amount to between 200 and 300. Whenever a stolon or bud is formed, this commences by a thickening of the internal layer at that part, which causes a bulging outwards of the external layer. Some of the buds were detached, and cilia, in motion, were observed upon their external surface, though none have yet been detected upon the external surface of the body where buds were not forming. Some of these buds were found detached, probably by accident, and lying at the bottom of the vessel in which the stone is kept, and these passed through the same amount of development as those adhering to the body of the animal, and in due time attached themselves to the surface of the vessel in which they were kept. In several animals the upper half of the body was cut off transversely by Dr. Reid, and after three or four days the lower or cut end closed in, and by the sixth day they had attached themselves firmly to the inner surface of the vessel, and shortly assumed all the appearances of the entire animal, sending out stolons and forming buds; new tentacula and a new mouth were also, after several days, formed upon the upper end of the lower half of the divided animals. Several were cut longitudinally through their whole length, and when means were not taken to keep the cut edges apart, they again soon adhered, and no traces of the incisions remained. In one the two halves were kept apart, and in each the cut edges approximated and adhered, and two separate animals were thus produced. Several were separated from the stone to which they adhered, and, if not much disturbed, they attached themselves in the course of three or four days to the inner surface of the vessel. Several were found adhering to the inner surface of the vessel in which the stone is kept; and two small specimens were observed upon the outer surface of a small mussel, which had been placed in the vessel containing them a few days before; and when this mussel was removed to a separate vessel, they left the surface of the mussel, and attached themselves to the inner surface of the vessel. The greater number of them, however, appear to remain nearly stationary. These animals did not divide into young Medusæ in March and April, as was to be expected, but are at the present time still propagating themselves by stolons and

buds; and the young thus produced propagate after a certain time in the same manner. While they are adding to their number by propagation, they are also suffering loss by death and other causes. These animals are voracious, and readily seize and swallow univalve or bivalve mollusca, or a crustacean, as large or even larger than their own bodies, and after retaining them in the stomach, generally for more than twenty-four hours, they reject them. They also not unfrequently swallow one of their neighbours, and the retention in the stomach for some time terminates in the destruction and digestion of the inclosed animal. When they seize a molluscan too large to be swallowed, they retain it firmly embraced by the tentacula, and insert their elongated mouth into the interior of the shell; and in like manner they keep dead articulated animals, too large to be swallowed, in their tentacula for more than a day, and in all probability extract nourishment, by acting upon them with their elongated mouth.

The accidental delay in the publishing of the 'Transactions' of the Society for this month enables me to add, that up to this period (27th July) these animals have not yet divided into young *Medusæ*—that they have only just ceased to propagate by buds and stolons—that they appear to be perfectly healthy—and that on the 11th instant a number of fresh specimens were obtained from the sea, adhering to the lower surface of two stones, near the place where the others were found last September.—*From the Transactions of the Literary and Philosophical Society, St. Andrews.*

New species of Mammalia. By J. E. GRAY, F.R.S.

Herpestes semitorquatus. Dark brown, yellow grised; sides and beneath rufous; feet blacker; tail paler; lips thin; throat and lower part of the side of the neck rufous, separated from the colour of the upper part of the neck by a well-defined straight line; fur rather rigid, with a fine brown undercoat; longer hair of the back dark brown, with a broad reddish yellow subterminal band; of the sides bright red-bay; of tail pale yellow, with a broad dark band and yellowish tip. Length: head and body 18·6; tail 11 inches.

Hab. Borneo. Sent to the British Museum by H. Lowe, Esq., in company with *Herpestes brachyurus*.

Felis Charltonii. This species is very like *Felis marmoratus*, but brighter and the dark spots rather differently disposed.

It comes from Darjeeling, in continental India.

It is curious to have two species so nearly allied from such different parts of Asia.

Pteromys punctatus. Bright bay; back ornamented with white spots.

Hab. Malacca.

This is the only species of the genus that has any white on its back. Its skull is much smaller than the other Asiatic *Pteromys*.